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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/003,553

10/24/2001

George Huang

00680365

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05/18/2005

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EXAMINER

PHAM, TUAN

ART UNIT

PAPER NUMBER

2643

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,553

Applicant(s)

HUANG ET AL.

Examiner

TUAN A. PHAM

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 and 8-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Applicant's remark, filed on 5/4/2005, with respect to the rejection(s) of claim(s) 1-12 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Pietrowicz (US Patent No.: 6,628,779) and Stave (U.S. Patent No.: 6,166,576).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3, 6, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pietrowicz (US Patent No.: 6,628,779) in view of Stave (U.S. Patent No.: 6,166,576).

Regarding claim 1, Pietrowicz teaches a system for improving the signal-to-noise ratio of a differential signal (see figure 6) comprising:

first and second signal lines connected to corresponding first and second inputs of a differential amplifier (see figure 6, primary Tip and Ring 29, differential amplifier 25, col.12, ln.35-41), wherein the means for adjusting improves rejection of common mode-noise by matching the impedance of the first input signal line with the second input signal line (see figure 6, impedance resistor ladder 24, differential amplifier 25, col.12, ln.25-41, the impedance ladder 24 is adjusting the input impedance of differential amplifier for reducing the common mode rejection to the output of differential amplifier 25).

It should be noticed that Pietrowicz fails to clearly teach a means for adjusting an impedance connected between at least one of the signal lines and a around point. However, Stave teaches such features (see figure 1, figure 4, impedance adjuster 110, ground point 152, differential amplifier 430, col.3, ln.7-30, col.5, ln.24-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Stave into view of Pietrowicz, in order to improve the echo signal at the near-end as suggested by Pietrowicz at column 1, lines 30-44.

Regarding claim 3, Pietrowicz further teaches a plurality of impedance elements selectively connected to plurality of switch members (see figure 8, resistor ladder 24 is included a plurality of impedance elements, plurality of switches S2-Sn).

Regarding claim 6, Pietrowicz teaches a system for improving the signal-to-noise ratio of a differential signal (see figure 6) comprising:

first and second signal lines connected to corresponding first and second inputs of a differential amplifier (see figure 6, primary Tip and Ring 29, differential amplifier 25, col.12, ln.35-41),

a plurality of impedance member and plurality of switches (see figure 6, resistor ladder 24 is included plurality of impedance member, plurality of switches S2-Sn), and

a controller coupled to the switches, the controller selectively connecting the impedance members to the at least one of the signal lines in order to match the impedance of the first and second signal lines to reject common mode noise (see figure 6, figure 8, controller 190, plurality of switches S2-Sn, impedance resistor ladder 24, differential amplifier 25, col.12, ln.25-41, the impedance ladder 24 is adjusting the input impedance of differential amplifier for reducing the common mode rejection to the output of differential amplifier 25).

It should be noticed that Pietrowicz fails to clearly teach an impedance connected between at least one of the signal lines and a around point. However, Stave teaches such features (see figure 1, figure 4, impedance adjuster 110 is included plurality of impedance member, ground point 152, differential amplifier 430, col.3, ln.7-30, col.5, ln.24-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Stave into view of Pietrowicz, in order to improve the echo signal at the near-end as suggested by Pietrowicz at column 1, lines 30-44.

Regarding claim 9, Pietrowicz further teaches the system and method for improving the signal-to-noise ratio further comprising a plurality of impedance members selectively connected to each of the signal lines with a plurality of switches (see figure 6, resistor ladder 24 is included plurality of impedance members, switches S2-Sn).

Regarding claim 10, Pietrowicz teaches a system for improving the signal-to-noise ratio of a differential signal (see figure 6) comprising:

providing first and second signal lines connected to corresponding first and second inputs of a differential amplifier (see figure 6, primary Tip and Ring 29, differential amplifier 25, col.12, ln.35-41), wherein selectively changing an improves rejection of common mode-noise by matching the impedance of the first input signal line with the second input signal line (see figure 6, impedance resistor ladder 24, differential amplifier 25, col.12, ln.25-41, the impedance ladder 24 is adjusting the input impedance of differential amplifier for reducing the common mode rejection to the output of differential amplifier 25).

It should be noticed that Pietrowicz fails to clearly teach an impedance connected between at least one of the signal lines and a around point. However, Stave teaches such features (see figure 1, figure 4, impedance adjuster 110, ground point 152, differential amplifier 430, col.3, ln.7-30, col.5, ln.24-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Stave into view of Pietrowicz, in order to improve the echo signal at the near-end as suggested by Pietrowicz at column 1, lines 30-44.

Regarding claim 11, Pietrowicz further teaches the system and method for improving the signal-to-noise ratio further comprising a plurality of impedance members selectively connected to each of the signal lines with a plurality of switches (see figure 6, resistor ladder 24 is included plurality of impedance members, switches S2-Sn).

4. Claims 4, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pietrowicz (US Patent No.: 6,628,779) in view of Stave (U.S. Patent No.: 6,166,576) as applied to claims 1, 6, and 10 above, and further in view of Anderson (U.S. Patent No.: 5,493,246).

Regarding claims 4, 8, and 12, Pietrowicz and Stave, in combination, fails to clearly teach some of the impedance elements are capacitors. However, Anderson teaches such features (see figure 2, C2 36-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Anderson into view of Pietrowicz and Stave, in order to improve the echo signal at the near-end as suggested by Pietrowicz at column 1, lines 30-44.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pietrowicz (US Patent No.: 6,628,779) in view of Stave (U.S. Patent No.: 6,166,576) as applied to claims 1 above, and further in view of Szabo et al. (U.S. Patent No.: 3,832,646, hereinafter, "Szabo").

Regarding claim 5, Pietrowicz and Stave, in combination, fails to clearly teach a means for adjusting an impedance connected to each of said first and second signal lines. However, Szabo teaches such features (see figure 4, C2, R12b).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Szabo into view of Pietrowicz and Stave, in order to improve the echo signal at the near-end as suggested by Pietrowicz at column 1, lines 30-44.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Kasha et al. (U.S. Patent No. 5,767,722), Fisher et al. (U.S. Patent No. 5,920,189), Ngo (U.S. Patent No. 5,856,891), and Casper et al. (Pub. No. US 2004/0021519) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is

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(571) 272-8097. The examiner can normally be reached on Monday through Friday,
8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

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have question on access to the Private PAIR system, contact the Electronic Business
Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643
May 6, 2005
Examiner

Tuan Pham


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600